

REMARKS

Applicant thanks the Examiner for carefully considering the present application. Please reconsider the present application in view of the above amendments and the following remarks.

Disposition of Claims

Claims 1-7 are currently pending in the present application. Claims 1 and 5 are independent claims, while the remaining claims depend from claims 1 and 5.

Note on Co-pending Applications

Applicant notes that the present application may be related to pending application No. 10/580,482. Applicant notes that while the aforementioned application is distinct in subject matter from the present application, out of an abundance of caution, Applicant hereby notifies the Examiner of the potentially related co-pending application.

Claim Amendments

Claims 1 and 5 have been amended by way of this reply. Claims 1 and 5 have been amended to conform to U.S. format, and to more precisely claim the present invention. Support for the amendments can be found, for example, in Figs. 1A, 1B, 2A, 2B, 5A, and 5B, and paragraphs [0056], [0057], [0065], and [0066] of the published application. Claim 5 has further been amended into independent form. No new matter has been added.

Rejections Under 35 U.S.C. § 112

Claims 5-7 of the present application were rejected under U.S.C. § 112, second paragraph, as being indefinite. The Examiner asserts that the intended scope of the claims is unclear because the claims recite elements that are already present in claim 1 from which they depend. Claim 5 has been amended into an independent claim. Accordingly, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. § 102

Claims 1-7 of the present application were rejected under 35 U.S.C. § 102 (b) as being anticipated by U.S. Patent No. 6,002,248 ("Binder"). Claims 1 and 5 have been amended by way of this reply. To the extent that the rejections may still apply to the amended claims, this rejection is respectfully traversed.

Claims 1 and 5, as amended, require, in part, that "the IC tag is a cylinder, and arranged such that a longitudinal axis of the cylinder is outside the raceway members."

The sealing member of claims 1 and 5, as shown, for example, in Fig. 1B, has a core metal 6 with an elastic element 7 disposed thereon. A cylindrical IC tag 9 is embedded in the elastic element 7, and is engaged in the core metal 6. Advantageously, the cylindrical shape of the IC tag 9 allows a coil antenna to be disposed therein, which enables transmission of radio waves over a long distance. Furthermore, by arranging the IC tag 9 such that a longitudinal axis (center of the IC tag 9 in Fig. 1A) of the cylinder is outside the raceway members 1, 2, the IC tag 9 is able to avoid thermal

influence of the bearing assembly, and suppresses the influence, from raceway members absorbing or reflecting the radio waves, on the IC tag 9.

Binder discloses, as shown in Figs. 1 and 3, an antifriction bearing having an outer ring 1 and an inner ring 4, with a seal 5 attached to the outer ring 1. A microsensor 6 for sensing rotational speed, rotational acceleration, driving forces, and/or braking forces is disposed on the seal 5.

The Examiner asserts that “it is apparent the sealing (5) includes a metal core for preventing the collapse of the sealing material during operation.” However, Binder is completely silent regarding a core metal. Instead, it appears that in Binder, the seal 5 is disposed directly on the outer ring 1, with no core metal.

Furthermore, contrary to the claimed invention, the microsensor 6 of Binder is a cuboid, and the entirety of the microsensor is disposed inside the rings 1, 4. Thus, Binder fails to show or suggest at least an IC tag that is *a cylinder*, and fails to show or suggest at least an IC tag arranged such that a longitudinal axis of the cylinder is *outside the raceway members*, as required by the claims.

Additionally, claims 1 and 5 require, in part, that the IC tag is “capable of performing communication on a non-contact basis.”

Although Binder describes in lines 32-34 of column 2 that the signal transmission “must inevitably take place in the rotating system by means of telemetry, e.g., by inductive

coupling,” Binder is silent as to non-contact communication accomplished by the IC tag in the claimed invention.

Further, Applicant notes that, in the Office Action, although the Examiner rejected claims 1-7 under 35 U.S.C. § 102 (b) as being anticipated by Binder, the Examiner has failed to support his rejection of claims 3, 4, and 7. Moreover, based on the separate rejection of these claims under 35 U.S.C. §103, Applicant believes that the Examiner did not intend to list the claims in this rejection.

In view of the above, claims 1 and 5 are patentable over Binder, at least for the above reasons. Claims 2-4 are dependent from claim 1, and claims 6 and 7 are dependent from claim 5. Thus, claims 2, 4, 6, and 7 are patentable over Binder, at least for the same reasons as claims 1 and 5. Accordingly, withdrawal of this rejection is respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 3, 4, and 7 of the present application were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Binder in view of U.S. Patent No. 6,501,382 (“Rehfus”). Claims 1 and 5, from which claims 3, 4 and 7 depend, have been amended by way of this reply. To the extent that the rejections may still apply to the amended claims, this rejection is respectfully traversed.

Claims 1 and 5, as amended, require, in part, “the IC tag is a cylinder, and arranged such that a longitudinal axis of the cylinder is outside the raceway members.”

As explained above, claims 1 and 5 are patentable over Binder. Rehfus discloses, as shown in Fig. 1, a bearing 2 have an inner race 3 and an outer race 5, with tapered rollers 7 disposed

between the inner race 3 and the outer race 5, and a cage 8 which maintains the proper spacing between adjacent rollers 7. Rehfus further discloses, as shown in Fig. 2, a chamber 21 disposed in an inner race 13, in which a RF tag 28 is disposed.

Contrary to the claimed invention, the RF tag 28 of Rehfus is embedded entirely in the inner race 13, as shown in Fig. 2. Thus, Rehfus fails to show or suggest at least an IC tag arranged such that a longitudinal axis of the cylinder is *outside the raceway members*, as required by the claims. Thus, the RF tag 28 would be thermally affected by the inner race 13, and the inner race 13 may absorb or reflect radio waves, affecting communication. Thus, Rehfus fails to supply that which Binder lacks.

Furthermore, the Examiner asserts that the outer race 5 “may be metal or rubber.” The Examiner’s assertion that the outer race 5 may be rubber has no support in the specification of Rehfus. In fact, a bearing 2 having an outer race 5 being made of rubber would not function properly as a bearing, since a deformable raceway member would deform under pressure from the rollers 7.

In view of the above, claims 1 and 5 are patentable over Binder and Rehfus, whether considered separately or in combination, at least for the above reasons. Claim 4 depends from claim 1, and claim 7 depends from claim 5. Thus, claims 4 and 7 are patentable over Binder and Rehfus, at least for the above reasons.

Claims 3, 4, and 7 of the present application were rejected under 35 U.S.C. § 103 (a) as being unpatentable over Binder in view of U.S. Patent No. 6,559,633 (“Nachtigal”). Claims 1 and 5, from which claims 3, 4, and 7 depend, have been amended by way of this reply. To the

extent that the rejections may still apply to the amended claims, this rejection is respectfully traversed.

Claims 1 and 5, as amended, require, in part, “the IC tag is a cylinder, and arranged such that a longitudinal axis of the cylinder is outside the raceway members.”

As explained above, claims 1 and 5 are patentable over Binder. Nachtigal discloses, as shown in Fig. 1, a speed sensing device 100 having a first support member 10, a second support member 20, and a rotation sensing device 30, a multiple ring member 40, and a seal member 50 disposed in an opening 3 between the inner race 2 and the outer race 4.

However, Nachtigal does not disclose that the rotation sensing device 30 is a cylinder, as required by the claims. Further, as shown in Fig. 1, a majority of the rotation sensing device 30 is disposed inside the inner race 2 and the outer race 4. Thus, the rotation sensing device 30 is not “arranged such that a longitudinal axis of the cylinder is outside the raceway members,” as required by the claims. Thus, the inner race 2 and the outer race 4 may absorb or reflect radio waves, affecting communication. Thus, Nachtigal fails to supply that which Binder lacks.

Additionally, Applicant notes that the rotation sensing device 30 of Nachtigal is a sensor, and not an IC tag, as required by the claims. Further, Nachtigal discloses in line 45 of column 6 that leads 32 extend out of the seal body member 52. Thus, the rotation sensing device 30 is not capable of performing communication on a *non-contact* basis, as required by the claims.

In view of the above, claims 1 and 5 are patentable over Binder and Nachtigal, whether considered separately or in combination, at least for the above reasons. Claims 3 and 4

depend from claim 1, and claim 7 depends from claim 5. Thus, claims 3, 4, and 7 are patentable over Binder and Nachtigal, at least for the above reasons.

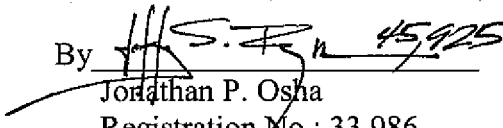
Conclusion

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number listed below. Please apply any charges not covered, or any credits, to Deposit Account No. 50-0591, under Order No. 17214/012001 from which the undersigned is authorized to draw.

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Respectfully submitted,

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